UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Ms. Karen Irons, P.E.
Manager
Air Quality Permits Program
Air and Radiation Management Administration
1800 Washington Boulevard
Baltimore, Maryland 21230

RE: General Services Administration (GSA), Federal Research Center at White Oak (FRCWO)

Dear Ms. Irons:

Thank you for the opportunity to review the proposed permit to construct and Prevention of Significant Deterioration (PSD) approval for the new Central Utility Plant (CUP #2) located at the FRCWO. The proposed combined heat and power project includes two 7.56 MW, and one 4.4 MW combustion turbines with heat recovery steam generators, two emergency generators, and one auxiliary boiler. The project will trigger PSD requirements for greenhouse gases (GHGs).

The Environmental Protection Agency (EPA) offers the following comments on the proposed project. We provide these comments to ensure that the project meets federal Clean Air Act requirements, that the permit will provide necessary information so that the basis for the permit decisions is transparent and readily accessible to the public, and that the permit record provides adequate support for the decisions.

If you have any questions, please do not hesitate to call me at 215-814-2173, or Mr. David Talley of my staff at 215-814-2117.

Sincerely,

Kathleen Cox
Associate Director,
Office of Permits and Air Toxics (3AP10)

Enclosure(s)

Enclosure

Project Description

The proposed combined heat and power project is part of the expansion of the Food and Drug Administration (FDA) research facilities at FRCWO in Montgomery County, Maryland. It will provide electricity, heat, and cooling to the new office and laboratory spaces at the campus. The project includes two Solar Taurus 7.56 MW combustion turbines and one Solar Mercury 4.4 MW combustion turbine, with heat recovery steam generators. It also includes two 2.25 MW emergency generators and one 25.1 mmBTU/hr auxiliary boiler. The project will trigger PSD requirements for GHGs. In order to avoid triggering nonattainment New Source Review requirements for NOx, and PSD requirements for PM_{10}, the permit to construct will include federally enforceable "synthetic minor" limits to keep NOx and PM_{10} emissions below 25 tons per year (tpy) and 15tpy, respectively.

PM_{10} Emissions

According to EPA's review of the submitted materials, the proposed facility has an unrestricted potential to emit (PTE) more than 15tpy of PM_{10}, which exceeds the significance threshold for triggering PSD requirements. In order to avoid triggering PSD, the permit to construct will include a condition limiting PM_{10} emissions to 14.9tpy. In order for a source to legally escape PSD requirements by adopting such a limit on its PTE, that limit must be enforceable as a practical matter. We have reviewed supplemental information submitted by the applicant, claiming that the PTE calculations are overly conservative and that "real world" operating scenarios will result in PM_{10} emissions below 15tpy. Nevertheless, EPA has lingering concerns regarding the practical enforceability of the PM_{10} synthetic minor limit, given the variability of operating conditions and fuel composition. Moreover, although the permit requires PM_{10} emissions be calculated monthly and a running total maintained, it is not entirely clear how those emissions will be calculated. We recommend that the permit clearly establish the method by which PM_{10} emissions must be calculated for purposes of determining compliance with the limit, and that additional operating limitations be added to ensure that the synthetic minor limit is enforceable as a practical matter. This could include additional limits on the hours of operation on the turbines or additional fuel constraints which would limit the variability of operating scenarios such that the synthetic minor limit could not be exceeded.

GHG Emissions

The proposed PSD approval does not include a numerical BACT limit for the facility's GHG emissions. We note that in Table 4-2 of the BACT analysis submitted by the applicant, there is a discussion of the GHG emissions from the various turbines being proposed for this facility, on a lb CO_2/MWh basis. A specific numerical emissions limitation, including one measured on an output basis, is EPA's preferred approach for establishing BACT for GHGs. Nevertheless, in our permitting guidance, we have acknowledged that in some circumstances, it is infeasible to apply a numerical limit (See "PSD and Title V Permitting Guidance for Greenhouse Gases," March, 2011, at p. 46). However, when design limitations or work practices are proposed as BACT in lieu of a numerical limit, the record must justify this decision. We recommend that the permit be revised to include a numerical limit, or that the record be revised to include a justification for determining that such a limit is infeasible and that the chosen design or practices will achieve emission reductions equivalent to a numerical limit.